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ABSTRACT

Discussing Controversial Issues (DCI) is a skill training program designed for high school students and teachers with an overall objective of developing student and teacher skill in discussing controversial issues effectively. The course materials identify 13 moderator techniques which teachers practice, and 13 participant techniques which students practice. Behavioral data were collected by audiotape recording a 25-minute classroom discussion on on a controversial issue both before and after the course. Questionnaires, vocabulary tests, weekly logs of issues, and classroom observation were utilized and inter-rater reliability was computed. Behavioral results for students and teachers are presented. Critiquers, students, and teachers each used the same scale to rate the discussion. Postcourse Teacher Questionnaires were filled out by the teachers and in general, strong support was given to the usefulness of the course. Overall, DCI produced an improvement in the use of discussion techniques. Because of feedback from students and teachers, several revisions will be made in the course materials and techniques. (RC)

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TEACHER EDUCATION DIVISION PUBLICATION SERIES

MAIN FIELD TEST REPORT

DISCUSSING CONTROVERSIAL ISSUES

Morris K. Lai, Meredith D. Gall, Rachel Ann Elder, Rita Wecthersby

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MAIN FIELD TEST REPORT

DISCUSSING CONTROVERSIAL ISSUES

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FAR WEST LABORATORY FOR EDUCATIONAL RESEARCH AND DEVELOPMENT

Revised March 1973

INTRODUCTION

Discussing Controversial Issues (DCI)* is a skill-training program designed for high school teachers and students. The overall course objective is to develop teachers' and students' skills in discussing controversial issues effectively.

The main rationale for developing such a course is the fact that in order to become effective citizens, students must be able to cope rationally with the value dilemmas and conflicts that the diversity of our society creates. Schools should also help students discriminate critically among alternative courses of action.

One way to help students deal with controversy is to have discussions that involve an open exchange of views in a rational climate of shared responsibility. Curricula involving discussion exist, but there are few programs to train teachers or students in discussion techniques. Both teachers and students will have more effective discussions of controversial issues if they learn specific discussion techniques.

Discussing Controversial Issues presents the viewpoint that the purpose of a controversial issues discussion should be to develop students' insights into their own and other people's opinions. Teachers should not use discussions to indoctrinate students or to impose their value judgments on students. Instead, the goal should be to expose students to all points of view and to help them develop criteria for making their own judgments. To do this, teachers need to assume the nonjudgmental role of a facilitator or moderator, and students need to assume the role of active participants.

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* The main field test version, reported on here, was titled Minicourse 14: A Discussion Approach to Controversial Issues.

The course materials identify thirteen moderator techniques, which teachers practice, and thirteen participant techniques, which students practice. These techniques along with the course objectives are listed on the next two pages. Many of the techniques are based on the work of Oliver and Shaver (1966) done at Harvard University and Massialas (1966) at the University of Michigan.

For students the course was a unit of study in one of their regular classes. Several teachers incorporated the discussion into the ongoing curriculum; others treated DCI as a separate unit.

The purpose of the main field test was to obtain data on behavioral changes associated with DCI. Course techniques were analyzed individually in order to assist in the subsequent revision.

Course objectives and discussion techniques are presented separately for the moderator and the participants. Tables 18, 19, 20, and 21, listing all the behavioral results, are presented in the Appendix.

Table 1a

COURSE OBJECTIVES AND TECHNIQUES

COURSE OBJECTIVE: To develop teacher and student skills needed for effective discussion of controversial issues, and to develop student insight into their positions on issues.

TECHNIQUES FOR THE MODERATOR

INTRODUCTION

Objective: To develop your skill in initiating a discussion of controversial issues.

1. Involve students in deciding what issue to discuss.

LESSON ONE

Objective: To develop your skill in maintaining a discussion of controversial issues in which different points of view are openly expressed.

1. Use supportive silence.
2. Ask students who haven't spoken what they think.
3. Support the right to speak of a student who expresses an unpopular point of view.

LESSON TWO

Objective: To develop your skill in listening and keeping the discussion focused on the controversial issue.

1. State the issue at the beginning of the discussion.
2. Question the relevancy of remarks.
3. Summarize discussion trends.

LESSON THREE

Objective: To develop your skill in probing and understanding different positions on an issue.

1. Ask for a temporary agreement to allow the discussion to be resumed after a deadlock.
2. Point out places where students should use participant techniques.

LESSON FOUR

Objective: To develop your skill in ending a discussion by evaluating its effectiveness.

1. Ask for a brief review of the discussion.
2. Ask students to state positions different from their own.
3. Ask if anyone has modified his position.
4. Discuss with students whether and how they want to continue to deal with the issue.

Table 1b

TECHNIQUES FOR PARTICIPANTS

INTRODUCTION

Objective: To develop your skill in initiating a discussion of controversial issues.

1. Decide which controversial issue to discuss.

LESSON ONE

Objective: To develop your skill in maintaining a discussion of controversial issues in which different points of view are openly expressed.

1. Talk to each other rather than to the moderator.
2. Avoid monopolizing; give several others a chance to speak after you've spoken.
3. Avoid speaking in a hostile tone of voice or engaging in personal attack.

LESSON TWO

Objective: To develop your skill in listening and keeping the discussion focused on the controversial issue.

1. Acknowledge a previous speaker.
2. Question the relevancy of speakers' remarks to the issue being discussed.

LESSON THREE

Objective: To develop your skill in probing and understanding different positions on an issue.

1. Ask for clarification.
2. Ask for evidence.
3. Ask about values.

LESSON FOUR

Objective: To develop your skill in ending a discussion by evaluating its effectiveness.

1. Review the main points of discussion.
2. State positions different from yours.
3. State any modifications you've made in your own position.
4. Decide whether and how you want to continue to deal with the issue.

Sample

After seeing an overview of Discussing Controversial Issues, teachers were invited to volunteer to participate in the main field test held during Spring 1971. In addition to the use of the course the Far West Laboratory offered to supply coordination and the necessary equipment.

Two semester units from the College of Notre Dame in Belmont, California, were available to those who completed the entire course. Of the 46 teachers who volunteered to participate in the training, 30 chose to receive college credit. Grades 8 through 12 including several ability levels were represented. Other sample characteristics are presented in Tables 2 and 3.

Control Group

An attempt was made to recruit a control group by offering a $15.00 honorarium to other teachers in the same school for the completion of two 25-minute audiotapes of a classroom discussion of a controversial issue. As Tables 3 and 4 show, the experimental and control groups were nonequivalent; furthermore, we were unable to control for pre-post practice effects. The subsequent analysis verified that indeed we had been unsuccessful in our attempt to get a true control group. Because of this difficulty, the results for the "control" group are presented separately in the Appendix instead of in the main body of this report. The "control" group had substantially higher entry levels on the key student variables of acknowledgment and interaction. In addition the "control" moderators indicated more confidence (before the course) in their skill as moderators and their ability to teach a course on discussing issues.

Dichotomizing the Study

As a result of field observations and the subsequent data analysis, it became apparent that most of the 17 classes in two of the urban schools reacted to DCI in a markedly different way from the rest of the sample. These two inner city schools, which included compensatory and opportunity classes, exhibited considerably lower entry levels and less improvement on several variables than did the other experimental classes. Interviews with the teachers in these schools revealed that for many of the students DCI was an intrusion into their previous arrangements regarding their curricula. Having been given the option of attendance for prior curricula, they now resented having to take part in the course every day for over four weeks.

Because of these circumstances, it was decided to analyze the two deviant schools separately from the rest of the sample. For ease in reference, the analysis of the main sample is referred to as Study 1 (E_1 = experimental, C_1 = control) with the remaining two schools described under Study 2. The relative lack of success in the Study 2 schools limits the scope of generalizability regarding the course's effectiveness.

Data Collection

Behavioral data were collected by audiotape recording a 25-minute classroom discussion on a controversial issue both before and after the course. A Laboratory field worker signaled the teacher when 5 minutes remained in each discussion.

Questionnaires, vocabulary tests, weekly logs of issues, and classroom observation were also utilized. In addition, teachers, students, and Laboratory critiquers used the same scale to rate independently the

Table 2

Sample Breakdown

	Number of Classrooms	
	Experimental	Control
San Francisco Bay Area (urban)	18	8
San Francisco Bay Area (suburban)	17	7
Fresno, California (private, Catholic)	8	4
	43	19
Approximate number of students	1100	500

Table 3

Sex of Teacher

		Experimental	Control
Study 1	Male	18	5
	Female	14	8
Study 2	Male	7	2
	Female	4	4
		43	19

Table 4

Grade Level and Vocabulary Score

	Grade Level		Vocabulary Score (Maximum = 20)	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.
E_1	10.2	1.2	14.0	1.9
C_1	9.9	1.3	13.6	1.3
E_2	11.6	.5	13.5	2.5
C_2	11.0	.9	12.8	1.3

discussions on the following six aspects: (1) whether the discussion moved along smoothly, (2) whether students were talking to each other and not just the moderator, (3) whether students were really listening, (4) whether the discussion remained focused on the issue, (5) whether students learned from the discussion, and (6) the effect of the discussion in terms of positive action.

Inter-rater Reliability

Each audiotape was independently scored by two of four critiquers, none of whom was on the development team. Pearson product-moment correlation coefficients were computed for the variables with an underlying continuous distribution. For dichotomous variables, percent of agreement is reported. The r's reported in Table 6 represent weighted averages of the r's computed separately for each combination of two raters. Since average scores were used in the analysis, the r's were adjusted using the Spearman-Brown prophecy formula (Horst, 1966).

In general the reliabilities appear to be lower than those obtained in previous evaluations of courses developed by the Far West Laboratory. The variables in this study, however, are somewhat unique and the discussions include a large amount of rapid student interaction. For variables with low occurrence, the product-movement correlation is not necessarily a good measure of accuracy of agreement; for example, although the tally differences between raters for the variable "asked about values" were rarely greater than one, the reliability is very low (.43). Other than for this variable, the lowest reliability coefficients occurred for the scaled subjective ratings which were done after the other behaviors were scored.

Table 5

Inter-rater Reliability

Moderator Techniques	r
Calls on non-talker	.74
Summarizes discussion trends	.79
Asks students to use techniques	.68
Questions relevancy	.78
Asks for temporary agreement	.73
Miscellaneous moderator talk	.96
Non-moderator talk	.89
Participant Techniques	
Asks for evidence	.87
Asks about values	.43
Asks for clarification	.80
Questions relevancy	.80
Personal attack	.81
Student-teacher interaction	.97
Acknowledges a previous speaker	.96
Does not acknowledge a previous speaker	.68
Rating Scales	
Smoothness of discussion	.65
Students talking to each other	.81
Students listening to each other	.47
Discussion remained focused on the issue	.66
Students learned	.52
Discussion of positive effect	.46

Dichotomous Variables	Percent of Agreement
1. Issue stated explicitly	81%
2. Unpopular position taken by student	90%
3. Discussion bogged down	90%
4a. Moderator asks for review	78%
4b. Students give adequate review	87%
5a. Moderator asks for opposing position	98%
5b. Students state opposing position accurately	96%
6a. Moderator asks for modification	93%
6b. Students give modification	95%
7a. Moderator asks about the next step	95%
7b. Students discuss the next step	93%

BEHAVIORAL RESULTS

Introduction

The moderator results are presented in the order in which each technique appears in the Teacher Handbook (see Table 1a), followed by the results of the student participants. Although the rating scales were based on the same raw behavioral data (i.e., the audiotaped discussions), they are presented in a separate section in order to facilitate presentation of the data. The final summary will incorporate all results together.

In reading the tables, one must be cautious in comparing Study 1 with Study 2. The size of the p's cannot be used to assess relative difference in shifts, since the degrees of freedom based on sample size are quite different.

The tests of significance (i.e., the one-tailed t-tests for correlated scores) are presented mainly for those readers who are used to such reporting. Difficulties associated with this method of analysis are described in several sources (e.g., Morrison and Henkel, 1970).

Finally, the percentage of teachers or classes of students who improved is presented for each of the techniques. This statistic gives a measure of how widespread the behavioral changes are.

Table 6

Teacher Use of Moderator Techniques - Lessons 1 and 2

N_1=32 N_2=11

Variable	Group	Pre $\bar{X}$	Pre S.D.	Post $\bar{X}$	Post S.D.	t	% Improving
Lesson 1							
Percentage of teacher talk (T/T+S)	E_1	33.9%	12.3[1]	22.6%	11.1[1]	-4.0**	75%
	E_2	36.3%	8.7[1]	33.6%	12.6[1]	.5	45%
Non-moderator talk	E_1	5.9	5.0	4.2	2.7	-1.9	59%
	E_2	2.6	1.9	5.1	5.2	1.5	55%
Moderator calls on non-talker	E_1	2.1	2.1	1.1	1.2	-2.7**	22%
	E_2	1.3	1.2	1.4	2.0	.1	45%
Lesson 2							
Moderator states issues at beginning (percentage using techniques)	E_1	75%		84%			9%
	E_2	45%		73%			28%
Moderator questions relevancy	E_1	.1	.3	.4	.7	2.0*	31%
	E_2	0	0	.1	.3	1.0	9%
Moderator summarizes discussion trends	E_1	.9	.9	1.4	.1	2.2*	63%
	E_2	.4	.5	.7	.8	1.2	27%

[1] Standard deviations are expressed in percent units.

* $p<.05$

** $p<.01$ (decreases)

Evaluation of Teachers' Use of Moderator Techniques

Lesson 1

Technique: Use supportive silence.

Measure a: Percent of teacher talk in a five-minute portion taken from the middle of the tape.

The data represent the proportion of the number of times the teacher spoke in relation to the total number of utterances by both students and the teacher.

E_1 (the main experimental group) made a substantial change, while E_2 showed some improvement. The entry levels for this variable are quite a bit lower than those found in previous Far West Laboratory studies, which sampled from classroom interaction not necessarily of the discussion type.

Measure b: Number of instances of non-moderator talk in a 15-minute portion.

Teacher talk which did not qualify as one of the moderator techniques or as miscellaneous moderator talk was classified as non-moderator talk. Miscellaneous moderator talk includes things like the teacher calling on students who request to speak or answering a question from a student.

This measure was an attempt to improve upon previous teacher talk measures which did not attempt to differentiate between desirable and undesirable talk on the part of teachers.

Only the main experimental group improved in decreasing their use of non-moderator behavior. The increase shown by E_2 is difficult to explain.

Technique: Ask students who haven't spoken what they think.

Measure: Number of times in 15 minutes that the moderator calls on a non-talker.

When this variable was first defined, the authors had planned to use videotapes to record the discussions. The subsequent move to audiotape made this a difficult variable to measure. Raters had to (1) hear specific comments by the moderator (e.g., "You haven't said anything, Pat. What do you think about this?") or (2) if the moderator simply said something like "What do you think, Todd?" and Todd's voice appeared to be one that the rater had not heard previously.

The results here are inconclusive. As with several other techniques, it is difficult to assess appropriateness; for example, if all students participate actively, then the technique of calling on non-talkers is not needed.

For the students' perception of how much they each participated in the discussion, see the section on the student questionnaire (pages 43 and 44).

Technique: Support the right to speak of a student who expresses an unpopular point of view.

Measure: Of the number of times which a student expresses an unpopular viewpoint (as evidenced by general disagreement from the rest of the group), the proportion of the time that the moderator expressed support for the particular student.

So infrequent was the occurrence of a student expressing an unpopular point of view (9 times in a total of 124 tapes) that the measurement of this technique was not carried further.

Lesson 2

Technique: State the issue at the beginning of the discussion.

Measure: Percent of teachers who state the issue in specific terms at the beginning of the discussion.

Mere statements of the general topic were not counted (e.g., "The discussion for today is on marijuana."). The issue had to be stated in a form such as "Should marijuana be legalized?"

Technique: Question the relevancy of remarks.

Measure: Number of times moderator questions relevancy in a 15-minute portion.

Raters tallied whenever the moderator asked students about the relationship of their remarks to the issue at hand, e.g., "How does your example relate to the legalizing of marijuana?"

The low frequencies here make the data analyses somewhat academic. As mentioned earlier, it is difficult to assess whether the behavior was or was not appropriate. If, on the posttest, students make fewer irrelevant remarks, then naturally these "desirable" moderator techniques should decrease. A related measure is the rating of whether the discussion focused on the issue (see Table 11 on page 30).

Technique: Summarize discussion trends.

Measure: Number of times during 15 minutes of discussion that the moderator asks for a summary.

This technique was tallied whenever the moderator gave a summary or incorporated two or more students' positions or discussed in what direction the discussion was heading.

For this variable, a ceiling effect is operating in that it is probably undesirable to summarize discussion trends more than one or two times. It would appear that E_1's posttest use of this skill is satisfactory.

Table 7

Teacher Use of Moderator Techniques - Lessons 3 and 4

N_1=32 N_2=11

Variable	Group	Pre $\bar{X}$	Pre S.D.	Post $\bar{X}$	Post S.D.	t	% Improving
Lesson 3							
Moderator temporary agreement	E_1	.1	.2	.2	.4	2.1*	31%
	E_2	0	0	.4	1.2	1.1	18%
Moderator asks students to use techniques	E_1	.9	1.1	1.4	1.5	2.7*	59%
	E_2	.3	.4	1.4	1.4	2.7*	73%

Lesson 4 (Percentage Using Techniques)				p^1
Moderator asks for review	E_1	53%	81%	.02
	E_2	45%	55%	.34
Moderator asks for positions different than own	E_1	6%	28%	.01
	E_2	0	0	
Moderator asks for modifications	E_1	0	16%	.03
	E_2	18%	0	.25
Moderator discusses the next step	E_1	3%	28%	.00
	E_2	9%	45%	.06

* $p<.05$

[1] Probability levels derived from the Binomial Test (Siegel, pp. 36-42).

Lesson 3

Technique: Ask for a temporary agreement to allow the discussion to be resumed after a deadlock.

Measure: Of the deadlocks that occurred, the proportion in which the moderator asked for a temporary agreement.

Deadlocks, as defined by raters' deciding whether the discussion bogged down due to disagreements, occurred in only 10 of 124 discussions. Therefore, the average number of instances of temporary agreement is listed for each group without the finer analysis. Although E_1 showed a statistically significant improvement, the posttest was still rather low with fewer than a fourth of the classes using the techniques. The low occurrence of deadlocks suggests that the technique of temporary agreement was not needed.

Technique: Point out places where students should use participants' techniques.

Measure: Number of times moderator asks students to use the participant technique of (1) asking for clarification, (2) asking for evidence, or (3) asking about values in a 15-minute portion.

Both groups showed improvement in the use of this moderator technique.

Lesson 4

Technique: Ask for a brief review of the discussion.

Measure: Percent of teachers who ask for a review at least once during the last eight minutes of the discussion.

The main experimental group made a significant gain and had a substantially higher percentage of teachers using this skill.

Technique: Ask students to state positions different from their own.

Measure: Percent of teachers who, during the last eight minutes of the discussion, ask students to state other students' positions.

Again only the main experimental group shows a substantial improvement. Even here, however, the postcourse percentage is still rather low (28%).

A possible explanation is the fact that many classes were unable to complete a discussion in the 25-minute taping period. Although a Laboratory field worker signaled when there were five minutes remaining, many classes never got around to formally concluding their discussions.

Other classes may not have had time to use all four techniques in the brief ending time period.

Technique: Ask if anyone has modified his position.

Measure: Percent of teachers who, during the last eight minutes of the discussion, ask students about modification of positions.

The comments previously made regarding the concluding of discussions also apply here.

Technique: Discuss with students whether and how they want to continue to deal with the issue.

Measure: Percent of teachers who, during the last eight minutes of the discussion, discuss with students whether and how they want to continue to deal with the issue.

Again the problems in measuring the conclusion of a discussion apply here. In this case both experimental groups showed a noticeable improvement.

Summary and Discussion

Study 1

The course appears successful in (1) reducing the percent of teacher talk, (2) reducing the amount of non-moderator talk, and increasing the percent of moderators who (3) state issues explicitly, (4) question relevancy, (5) summarize, (6) ask for temporary agreement, (7) ask students to use techniques, (8) ask for a review, (9) ask students to state others' positions, (10) ask for modifications, and (11) ask about the next step at the end of a discussion.

Some of the variables evinced low frequencies and are possibly of little practical value when considered by themselves. Furthermore, it is not known how often techniques should be used; sometimes a single intervention may be effective, or perhaps none at all is needed.

Study 2

On only four variables did E_2 moderators improve: (1) stating the issue, (2) asking students to use techniques, (3) asking for a review, (4) asking students about the next step at the end of a discussion.

Table 8

Student Use of Participant Techniques - Lessons 1 and 2

N_1=32 N_2=11

Variable	Group	Pre $\bar{X}$	Pre S.D.	Post $\bar{X}$	Post S.D.	t	% Improving
Lesson 1							
Percent student talk	E_1	66%	12.3	77%	11.1	4.0**	75%
	E_2	64%	8.7	72%	12.6	.5	45%
Student-to-student interaction	E_1	6.8	6.2	15.0	8.6	4.5**	81%
	E_2	5.5	3.4	6.3	5.9	.3	45%
Students personal attack	E_1	.1	.3	.6	1.0	2.5**	63%
	E_2	0	0	.1	.2	1.0	81%
Lesson 2							
Students acknowledge a previous speaker	E_1	5.5	5.3	13.0	8.1	4.5**	81%
	E_2	4.7	2.9	5.5	5.3	.3	45%
Students questioning irrelevancy	E_1	0	.1	.4	.7	2.8**	34%
	E_2	.1	.3	.1	.3	0	0

** $p<.01$

Evaluation of Students' Use of Participant Techniques

Lesson 1

Technique: Talk to each other rather than the moderator.

Measure a: Percent of student talk in a five-minute sample.

These figures are complementary to those found in Table 6, Percent of Teacher Talk.

Only the main experimental group showed a non-trivial increase in percent of student talk.

Measure b: Student-student interaction in a five-minute portion (i.e., the number of times a student spoke after another student had just spoken).

For example, if S represents a student speaker and T the teacher when speaking, then SSTSSSTST represents three student-student interactions. One of the main goals of DCI was to get students to talk more to each other and less to the teacher. The course was clearly successful in increasing the student-student interaction for E_1, as shown in Table 8.

Technique: Avoid speaking in a hostile tone of voice or engaging in personal attack.

Measure: Number of times hostility or personal attack occurred in a 15-minute portion.

Some indications of hostility were shouting and derogatory personal reference. Frequencies are extremely low, indicating that students

generally do avoid hostility in classroom discussion. It is interesting to note that, although the course treated the reduction of personal attack or hostility as desirable, James Shaver of Utah State University has said that he expects such attacks to increase as students get more involved in discussions.[1]

Lesson 2

Technique: Acknowledge a previous speaker.

Measure: In a five-minute portion, the number of times a student speaker prefaces his remarks by referring to the words or specific ideas of a previous speaker.

A large gain was made by E_1 students who more than doubled their amount of acknowledgment. This group also exhibited a far greater percentage of classes that improved from pre to post.

Technique: Question the relevancy of speaker's remarks to the issue being discussed.

Measure: Number of times in 15 minutes that a student asks that a speaker explain how his comments are related to the issue at hand.

Low frequencies again make the analysis of differences of academic interest. This variable is, of course, related to the extent that irrelevant comments were made.

---

[1] personal communication

Table 9

Student Use of Participant Techniques - Lessons 3 and 4

N_1=32 N_2=11

Variable	Group	Pre $\bar{X}$	Pre S.D.	Post $\bar{X}$	Post S.D.	t	% Improving
Lesson 3							
Students asking for clarification	E_1	.5	.7	1.3	1.5	3.1**	50%
	E_2	.1	.2	.6	.8	2.2*	45%
Students asking for evidence	E_1	1.3	2.0	3.0	1.9	4.4**	69%
	E_2	2.2	2.5	1.5	.9	-.8	45%
Students asking about values	E_1	.1	.2	.5	.9	2.3*	41%
	E_2	0	0	.1	.3	1.4	18%
Lesson 4 (Percentage of classes in which technique was used)						p[1]	
Students giving review	E_1		22%		47%	.02	
	E_2		27%		18%	.50	
Students stating position different than own	E_1		3%		25%	.01	
	E_2		9%		9%	.75	
Students modifying position	E_1		0		22%	.01	
	E_2		0		9%	.50	
Students stating where to go from here	E_1		6%		19%	.03	
	E_2		9%		18%	.50	

* $p<.05$

** $p<.01$

[1] Probability levels derived from the Binomial Test (Siegel, pp. 36-42).

Lesson 3

Technique: Ask for clarification

Measure: In a 15-minute portion of the discussion, the number of times a student asks a speaker to clarify what he said.

Both groups showed an increase in the use of this skill. The overall goal for Lesson 3 was to give some depth to the discussion.

Technique: Ask for evidence.

Measure: In a 15-minute portion of the discussion, the number of times a student asks the speaker to back up his assertion with evidence.

Students in E_1 showed a clear increase in the use of this skill. Because students also gave more reasons after the course, the increase in asking for evidence is probably more substantial than it seems at first glance; i.e., there were more opportunities to ask for evidence on the pre- than on the posttest.

Technique: Ask about values.

Measure: In a 15-minute portion of the tape, the number of times a student asked about values.

Low frequencies were found. It appears that the course was unsuccessful in getting students to make much use of this technique. It is possible that in a 25-minute discussion it is not appropriate to ask about values because the level of communication is still somewhat superficial.

Lesson 4

Technique: Review the main points of discussion.

Measure: During the last eight minutes of the discussion, whether or not a student reviewed the main points.

As with all the Lesson 4 measures, student performance is highly dependent on the teacher's performance as moderator. As shown in the previous section, moderators did not make substantial use of the Lesson 4 techniques. In this case, for example, if the moderator asked for a review then students had a higher probability of actually giving one. Student reviews were not counted if they were grossly inaccurate or mere restatements of the particular speaker's position.

As shown in Table 8, only E_1 showed any improvement. It is important to remember that several classes felt they did not have time to conclude the discussion and hence did not get around to using the techniques of Lesson 4.

Technique: State positions different from yours.

Measure: During the last eight minutes of the discussion, whether or not a student stated another student's position.

Again only E_1 made an improvement. However, it should be noted that even in this group, 75% of the classes did not use the technique on the post-tape.

Technique: State any modification you've made in your own position.

Measure: During the last eight minutes of the discussion, whether or not a student expressed a modification of his position.

The results here should be interpreted in relation to the moderator results described earlier.

There was some improvement, but low postcourse levels. If none of the students in a discussion modified their positions, this is not necessarily a poor discussion.

Technique: Decide whether and how you want to continue to deal with the issue.

Measure: During the last eight minutes of the discussion, whether or not a student discussed how to continue to deal with the issue.

Both groups showed moderate increases. In each case a larger percentage of moderators discussed the next step than did students.

Summary and Discussion

The main experimental group improved for all course behaviors except for engaging in personal attack; however, the students in E_2 made fewer and smaller gains. The most significant E_1 gains were in student-to-student interaction, acknowledgment of a previous speaker, asking for evidence, and the four Lesson 4 techniques.

RATING SCALE RESULTS

Critiquers, students, and teachers each used the same scale to rate the discussion on six aspects. These measures were an attempt to discern (1) differential rater perceptions, in particular, between students and teachers; (2) perceptions of shifts; and (3) differences in perceptions among the two treatment groupings.

The critiquers did not use these forms until several tapes had already been scored. This explains why the N for critiquers is lower than the N's for students or teachers.

All three groups of raters (students, teachers, critiquers) seem generally to agree about the trends with regard to smoothness of the discussion. They all perceived that E_1 improved slightly (but the teacher raters noted a somewhat greater improvement).

Table 10 presents the results for ratings 1 to 3. The first rating measures the extent to which students interact with each other rather than with the moderator. Substantial gains were made by E_1.

For the ratings of the extent to which students appear to be listening to each other, all raters detected an increase for E_1. The results for the other group are mixed. There was one large shift perceived: teachers in E_2 felt their discussions improved.

Table 11 presents ratings 4 to 6. Rating 4 measures the extent to which the pre- and postcourse discussions stayed focused on the issue. For Study 1, only the teachers noted a substantial improvement. This in part is explained by their low initial rating of 2.3. E_2 received mixed reviews.

Table 10

Results of Ratings 1, 2, and 3

N_1=30 Students, 29 Teachers, 20 Critiquers

N_2=10 Students, 10 Teachers, 9 Critiquers

Group	Raters	Pre $\bar{X}$	Pre S.D.	Post $\bar{X}$	Post S.D.	t	% Improving
Rating 1		1 Discussion bogged down ←-----→		4 Moved along smoothly			
E_1	Students	3.0	.5	3.0	.5	.3	47%
	Teachers	2.5	.9	3.1	.8	3.0**	46%
	Critiquers	3.1	.6	3.2	.6	.4	45%
E_2	Students	2.9	.5	2.7	.7	- .9	30%
	Teachers	2.7	.8	2.3	.8	-1.3	20%
	Critiquers	3.4	.5	3.2	.6	-1.1	22%
Rating 2		1 Talked to moderator ←-----→		4 Talked to each other			
E_1	Students	2.8	.7	3.2	.5	3.7**	73%
	Teachers	2.3	.9	3.1	.8	5.0**	71%
	Critiquers	2.3	.8	3.2	.8	3.7**	75%
E_2	Students	2.7	1.1	2.6	.6	- .3	50%
	Teachers	2.3	1.1	2.3	1.0	0	50%
	Critiquers	2.7	1.1	2.6	1.0	- .1	33%
Rating 3		1 Students not listening ←-----→		4 Really listening			
E_1	Students	3.3	.3	3.4	.4	.9	53%
	Teachers	3.1	.8	3.3	.6	.8	29%
	Critiquers	3.0	.7	3.2	.6	1.2	50%
E_2	Students	3.3	.5	3.2	.6	- .8	30%
	Teachers	3.2	.6	3.6	.5	2.4*	40%
	Critiquers	2.9	.7	3.0	.5	.2	44%

* $p<.05$
** $p<.01$

Table 11

Results of Ratings 4, 5, and 6

N_1=30 Students, 29 Teachers, 20 Critiquers N_2=10 Students, 10 Teachers, 9 Critiquers

Group	Raters	Pre $\bar{X}$	Pre S.D.	Post $\bar{X}$	Post S.D.	t	% Improving
Rating 4		1			4		
		Discussion wandered ←----→ Focused on issue					
E_1	Students	3.1	.5	2.9	.6	- .9	40%
	Teachers	2.3	.7	3.0	.5	4.3**	61%
	Critiquers	3.0	.6	3.1	.6	.1	50%
E_2	Students	3.0	.4	2.7	.4	-2.0	30%
	Teachers	2.6	1.0	2.8	.8	.5	40%
	Critiquers	2.8	.5	2.9	.3	.7	33%
Rating 5		1			4		
		No learning ←----→ Students learned					
E_1	Students	3.0	.4	3.2	.4	2.2*	53%
	Teachers	2.7	.7	3.1	.7	2.3*	43%
	Critiquers	2.4	.7	2.7	.7	1.3	45%
E_2	Students	2.9	.3	2.7	.7	-1.0	40%
	Teachers	2.8	.9	2.9	.6	.4	30%
	Critiquers	2.3	.5	2.3	.4	.2	33%
Rating 6		1			4		
		Discussion of no effect ←----→ Resulted in positive action					
E_1	Students	2.6	.4	2.8	.4	1.8*	53%
	Teachers	2.3	.8	2.7	.8	2.2*	46%
	Critiquers	1.8	.7	2.2	.7	2.2*	70%
E_2	Students	2.6	.2	2.4	.6	-1.0	20%
	Teachers	2.3	.8	2.6	.5	1.0	40%
	Critiquers	1.9	.8	1.6	.7	- .6	33%

* $p<.05$
** $p<.01$

Rating 5 measures the extent to which students learned something from the discussion. All raters felt that E_1 improved.

Rating 6, which is also summarized in Table 11, measures the extent to which the discussion resulted in positive action being taken. E_1 was seen to have improved by all raters. Teachers felt that E_2 improved while students and critiquers felt otherwise.

Summary and Discussion

Conclusions must be tempered by the fact that the ratings tended to have low reliability coefficients.

The main experimental group was seen to have improved by all three groups of raters on every rating except number 4 (whether the discussion focused on the issue). For this rating, students noted a slight decrease, but teachers perceived a substantial improvement. The E_2 group exhibited shifts both up and down, but mostly down.

POSTCOURSE TEACHER QUESTIONNAIRES

Resume from Long Form

The following summary is taken from a more detailed compilation by Rachel Ann Elder (1971).

Postcourse Teacher Questionnaires were filled out by 36 teachers (21 male and 15 female) with an average of 8 years of teaching experience (range 2 to 21 years). In general, the teachers strongly support the usefulness of the course and urge its further development; they made many suggestions for revision of specific aspects of the course but listed more strengths than weaknesses for all the major components of the course:

1. Teacher Handbook. Most teachers commented favorably on the clarity and good organization of the handbook, although half of the teachers made suggestions for revisions of one or more specific items.
2. Student Handbook. The majority of the teachers felt that the student handbook was well-written, although a fourth of the teachers found the handbook too difficult for at least some of their students to read and a sixth of the teachers commented that it was not sophisticated enough for older, brighter students. Thus, the handbook seemed to be, as intended, most usable for the so-called average high school student. Although half the teachers reported students' negative reactions to the handbooks and suggested changes in format to make it more interesting, varied, and less formal, no teacher recommended elimination of the Student Handbook. The teachers seemed to agree with the content of the student materials, but to ask

that the format be modified so that the teacher can select the level of difficulty and the timing according to the characteristics of the students in the class.

3. Self-check Exercises. Although most of the teachers supported the idea of having self-check exercises, students did not always see the purpose of the exercises and some of the exercises need to be revised because they are too ambiguous or too easy.
4. Self-evaluation Forms. These were generally considered an important strength of the course, although revisions may be needed to provide more variety in format and make them more adaptable for different students.
5. Videotapes. Teachers found these useful, but a fourth of them encountered difficulties in the model films, especially ambiguous items in the model film check lists. About a fourth of them encountered technical difficulties with the video equipment.
6. Classroom Discussion Set-up (three groups at one time). Teachers seemed to have more difficulties with the small discussion groups than with the parts of the course previously discussed; at the same time two-thirds of the teachers reported advantages of the small groups. Suggestions for varying or adapting this procedure might be helpful.
7. Tape Recording and Playing Back Some of Your Discussions. Two-thirds of the teachers had difficulties in obtaining usable tapes, but two-thirds also reported this as valuable for students. Teachers did not comment on its value for their own learning. Teachers need more help in learning how to obtain usable tapes, and probably also in how to use the feedback.

8. Coordination of the Course by Far West Laboratory Personnel. Although the teachers were in general favorably impressed with coordination by Far West personnel, it is clear that this course, at least in its present form, is not completely self-instructional for the teacher--the teacher needs and appreciates support in carrying through on this course.

The most frequently listed interesting topics were legalization issues (drugs, abortion, capital punishment, prostitution, etc.) and school issues (compulsory attendance, grading, and local school policies). Human relations, social revolution methods, and war issues were less frequently mentioned.

Of the 36 teachers, 34 observed changes in their students: in addition to learning techniques of the course, some teachers reported that students have increased respect for each other.

Half the teachers reported that some of their students thought the course beneficial and some were negative. A fourth of the teachers reported students were positive about the value of the course and a fourth said most of the students were negative. So many teachers reported widely divergent student responses within a classroom that it seems clear that there are important student variables related to positiveness and negativeness toward the course. Intelligence or previous academic records were not given as characteristics associated with student evaluations of the course. Satisfaction seemed to be associated with having learned some of the techniques, and dissatisfaction seemed to be associated with Discussing Controversial Issues having replaced part of a course which the student

had chosen and with students not seeing the importance of learning discussion techniques. Of the 35 teachers, 34 felt that this course should be included in the high school curriculum.

Nearly a third of the teachers reported that they talk less in discussions since taking the course and a sixth say they are better listeners. These are techniques emphasized in the first part of the course. Techniques in the last part of the course were less frequently mentioned, but teachers commented on many influences on their teaching that were related to the course, but not to specific techniques.

The majority of teachers felt the course was suitable for all high school students, although seven would recommend it mainly for younger high school students and an equal number for juniors and seniors. It would seem appropriate to continue to say that the course is intended for grades 9-12.

The course is seen by teachers as being equally appropriate for social studies and English courses.

If teachers could choose how and when to use the course with students, most of them would either use it at the beginning of the year or integrate the materials into their ongoing course. Student materials should therefore be produced in forms and media to facilitate such varied uses.

Almost all the teachers felt that Discussing Controversial Issues was better or much better than other inservice education courses they have taken. Teachers had a positive attitude toward the course and urge its further development. They seemed to ask for three types of revisions: greater flexibility in scheduling, more emphasis on research and analysis

of issues, and more variety and interest in the Student Handbook. This seems to indicate that teachers are willing to put more of their own time and effort into adapting the course rather than expecting revisions that would make this a self-contained unit for students. However, they would appreciate a more interesting Student Handbook.

The following tables convey a type of global assessment by teachers of the course.

Table 12

Compare Discussing Controversial Issues with your other inservice education experiences

11	Much better
18	Better
4	On par
0	Worse
0	Much worse
2	No others
1	Blank
Total 36	

Table 13

Assuming that Discussing Controversial Issues is revised to correct the deficiencies, do you feel it should be included in the high school curriculum?

16	Yes, strongly
17	Yes
1	Uncertain
0	No
0	No, strongly
1	Optional
1	No, should be incorporated in subjects being taught
Total 36	

Teacher Questionnaire - Short Form

After both the pre and post discussions, teachers used a rating scale to assess their attitudes and skills. For the results shown in Table 14, the percent gaining indicates those teachers whose postratings were higher than their preratings. Since a 4-point scale was used, the minimum gain counted would be of one unit.

Both groups expressed a high level of comfortableness regarding having discussions of controversial issues in their classes. This is understandable in view of the fact that the teachers involved volunteered to take the course.

Both groups of teachers perceived an improvement in their skill as moderators. The percentage gaining as well as the size of the gain were substantial.

The data from Question 3 exhibit a trend similar to that shown for the second question. Teachers who took the course felt they improved in their ability to moderate discussions as well as teach the skills needed.

E_1 started at a lower level but equalled E_2 on the posttest, in responding to the question on understanding the issue being discussed.

For the final question, neither of the groups expressed any real change in their responses regarding consideration of values although their entry levels were on the high side.

Table 14

Teacher Questionnaire - Short Form

N_1=29 N_2=10

Group	Pre		Post		t	% Improving
	$\bar{X}$	S.D.	$\bar{X}$	S.D.		
1. How do you feel about having controversial issues in your class? (1 Uncomfortable – 4 Comfortable)						
E_1	3.9	.4	3.8	.5	- .4	7%
E_2	4.0	0	3.8	.4	-1.5	0
2. Your skill as a moderator is (1 in need of a lot of improvement – 4 satisfactory)						
E_1	2.3	1.0	3.1	.6	4.1**	64%
E_2	2.4	.8	3.2	.8	2.4*	70%
3. Your understanding of how to teach discussion skills is (1 unsatisfactory – 4 satisfactory)						
E_1	2.2	.9	3.2	.6	5.1**	68%
E_2	2.2	.8	3.1	.7	2.6*	70%
4. As a result of the discussion, your understanding of the issue (1 became less clear – 4 became clearer)						
E_1	2.9	.8	3.4	.7	2.5*	54%
E_2	3.2	.6	3.4	.7	.7	30%
5. In a controversial issues discussion, consideration of values is (1 usually inappropriate – 4 of prime importance)						
E_1	3.5	.7	3.5	.6	.2	25%
E_2	3.4	.7	3.3	.5	- .4	20%

* $p<.05$
** $p<.01$

POSTCOURSE STUDENT QUESTIONNAIRES

Questionnaires were summarized by class with answers ranked in order of frequency. Tallies represent classes: for example, under Student Comments on the videotapes, 12 classes had "need a better model film checklist" as one of the three most frequent responses. N=42 classes.

Table 15

Comments on Handbooks

26	Simplify, use easier vocabulary
18	Condense
17	Make more interesting
13	More examples
7	Explain techniques better
7	Less repetition
7	Make less easy
6	Eliminate book
4	Define hard words
4	Use multicolors
4	More detail
3	Illustrate
3	More exercises
3	More conversation

Comments on Videotape (How to Improve)

12	Better model film checklist examples (less obvious)
10	Explain techniques better
9	Make less phony
8	Use one group and one subject per film
8	Eliminate
8	Larger screen
6	Make more interesting
6	Condense
6	Color TV
5	Fewer interruptions of discussions
5	Explain answers better
5	Better topics
5	Use negative examples, too
5	Longer topics
4	Better examples
4	Better sound
4	Less repetition
4	Slower

Techniques Left Out, But Important

5	Getting and bringing research evidence to class
4	Selecting issues
3	Bringing non-participants in
2	Sticking to one topic
2	How to keep interest going

Techniques that Should be Dropped

5	Avoid hostile tone and personal attack
4	Acknowledge previous speaker
4	Avoid monopolizing
3	Ask about values
2	Supportive evidence

What Did You Dislike About the Course?

17	Too long
17	Boring
16	Issues chosen
16	Reading handbook
10	Videotapes
8	Taping discussions
8	Forced discussions
7	Too short
6	Inflexible time schedule
5	Not enough controversy
5	Discussing in front of others
4	Papers required

Overall, What did you like about the course?

25	Being able to talk freely
23	The discussions
17	Learning the techniques
16	Hearing what others had to say
12	The videotapes
8	Learned more about the topics
8	Interesting new topics
7	Different from other courses
6	Helped overcome shyness
6	Little or no outside work
6	Student interaction
5	Up-to-date topics
5	Chance to discuss controversial issues in class

What Didn't You Discuss that You Would Have Liked To?	
22	Drugs
17	Vietnam War
12	Ecology
10	Abortion
9	Premarital sex
9	Calley
9	Religion
7	Women's liberation
7	Draft
7	Marriage
6	Racism
6	Police brutality
5	Welfare
5	Generation Gap
5	Capital punishment
4	Sports
4	18 year olds' vote
4	Space program
3	Birth control
3	Compulsory education
3	Euthanasia
3	Bussing
3	Open campus
3	Government influence
3	Parent/child relationship

What Were the Three Most Interesting Issues That You Discussed?	
15	Abortion
10	Drugs
8	Women's liberation
7	Draft
6	Capital punishment
6	Calley
5	Premarital sex
5	Population
4	Space program
4	Vietnam War
4	Bussing
3	Compulsory education
3	Religion
3	Police brutality
3	Prostitution

(three choices per class)

When asked to compare DCI with their other courses, the students in the experimental groups made the following responses:

	E_1 (33 classrooms 440 students)	E_2 (9 classrooms 80 students)
Better	30%	31%
On par	49%	54%
Worse	21%	15%

After the pre- and posttape discussion, the students in the discussion filled out a one-page questionnaire. Some of the results were reported

earlier in the section on Rating Scales. The remaining results, discussed below, are summarized in Table 16.

Item 1: Students in E_1 clearly indicated that DCI resulted in an increase in student involvement in choosing the issue. Those in E_2 apparently were already involved in choosing the issue.

For items 2 and 3, it was considered desirable for the middle category ("remained the same") to decrease. The rationale here is that the discussion should affect the participants in some way, including what might be considered negative ways.

Item 2: The major change shown by E_1 was an 8% increase in the percentage of students whose understanding of their own position became clearer, complemented by a 9% decrease in the percentage of students whose understanding remained the same. E_2 showed an increase in the proportion of students whose understanding of their own position became clearer, with an accompanying downshift in the proportion of students whose position remained the same.

Item 3: E_1 students indicated an increase while E_2 students showed a decrease in the proportion of students whose understanding of others' positions became clearer.

Item 4: After the course, a larger percentage of E_1 students and a smaller percentage of E_2 students felt that the discussions strengthened their original position. For E_2, an increased percentage said their positions had been modified somewhat.

Item 5: The main finding here is that as a result of the course, the percentage of E_1 students who spoke several times increased, while the percentage of E_2 students that did not speak at all was decreased. This corroborates our finding that in some of the E_2 schools which had a number of immigrants from Hong Kong, the teachers reported that, as a result of the course, some students were speaking up in class for the first time.

Table 16

Short Student Questionnaire: Study 1 and Study 2

	E_1		E_2	
	Pre	Post	Pre	Post
1. The issue was chosen by				
Teachers and Students	36.4%	59.6%	61.9%	68.8%
Teacher Only	44.5%	15.9%	17.5%	16.2%
Students Only	19.1%	24.4%	20.6%	15.0%
2. As a result of the discussion, your understanding of your own position on the issue				
Became less clear	3.6%	4.8%	1.0%	6.4%
Remained the same	49.7%	40.6%	57.7%	42.3%
Became clearer	46.7%	54.6%	41.2%	51.3%
3. Your understanding of the position of others				
Became less clear	2.9%	4.2%	5.2%	3.8%
Remained the same	24.8%	17.6%	32.3%	38.5%
Became clearer	72.3%	78.2%	62.5%	57.7%
4. As a result of the discussion, your original position was				
Strengthened	36.7%	43.8%	43.3%	35.5%
Modified somewhat	57.0%	52.8%	47.8%	56.6%
Weakened	6.2%	3.4%	8.9%	7.9%
5. During the discussion you spoke				
Several times	38.4%	48.3%	29.6%	32.9%
A few times	52.2%	43.9%	57.1%	58.2%
Not at all	9.4%	7.8%	13.3%	8.9%

USE OF STUDENT HANDBOOKS

As an unobtrusive measure of actual student use of the course materials, 52 Student Handbooks were collected after the course was over.

Table 17

Use of Handbook Exercises

Lesson	% of Students Doing Exercises			
			Self-Evaluation	
	Model Film Checklist	Self-Check List	First Discussion	Second Discussion
1	87	42	71	63
2	80	53	65	62
3	86	75	71	33
4	75	51	73	54

Although the individual percentages fluctuate, the overall use by students remained relatively constant throughout the four lessons; for example, fewer students did the model film checklist and self-checklist for Lesson 4 than Lesson 3, while more students used the Lesson 4 Evaluation forms.

An interesting study would be the investigation of the relationship between use of the exercises and performance in discussions. This would be a first step in assessing the relative importance of the various facets of the course.

SUMMARY AND DISCUSSION

Overall Assessment

Overall, DCI produced an improvement in the use of discussion techniques among those classes in Study 1 who took the course. Some of the behaviors exhibited substantial shifts in the desired direction, while others were of too low a magnitude to be of practical value when considered individually. For some of the shifts, we are not able to say whether or not the changes definitely represent an improvement.

The students in Study 2 who took the course improved slightly. As utilized in the main field test, DCI did not accomplish its specific objectives with this group, which included opportunity and compensatory classes in urban schools. When E_1 and E_2 are compared, they seemed equivalent in their attitudes toward the course. On most variables, the two groups had comparable entry levels but quite different post course scores.

In Study 2 both moderator and participants performed substantially worse than those in Study 1. There is possibly an interactive effect whereby poor performance by say, the participants, promotes poor performance by the moderator.

Revisions Based on Main Field Test Data

In response to student comments on the course, the Student Handbook has been rewritten to incorporate cartoons in an attempt to make the reading more interesting. In addition, the reading level was lowered and

humor was added. The writing style became more direct and informal. Students indicated that they disliked the model tape checklist discriminations. Accordingly, students are now asked to watch for certain discussion characteristics, and the model tape is intended to stimulate discussion.

Both teacher and students had difficulty with the technique of asking about value bases. This technique has been dropped in the most recent version.

Because teachers complained about the rigidity of the four-week schedule, the revised course was made self-pacing. Each teacher will decide how long to spend on a lesson.

Sample lesson plans were developed, based on what field test teachers said seemed to have worked the best. They provide guidelines for planning activities with students and suggestions for using the course materials, choosing topics, giving feedback, and giving assignments that maintain students' interest.

Because the previous method of tape recording discussions and playing them back for the whole class proved unworkable, teachers are now asked to audiotape segments of discussions that they moderate, and evaluate their performance using self-evaluation forms.

APPENDIX

Table 18
Moderator Behavioral Results Study 1

VARIABLES	EXPERIMENTAL (N=32)			CONTROL (N=13)		
	PRECOURSE MEAN (S.D.)	POSTCOURSE MEAN (S.D.)	% IMPROVING	PRECOURSE MEAN (S.D.)	POSTCOURSE MEAN (S.D.)	% IMPROVING
MODERATOR						
1. Percent of teacher talk	34% (12.3)	23% (11.1)	75	29% (12.9)	28% (10.1)	46
2. Non-moderator talk	5.9 (5.0)	4.2 (2.7)	59	5.4 (3.9)	8.0 (5.2)	31
3. Calls on non-talkers	2.1 (2.1)	1.1 (1.2)	22	.6 (.9)	1.3 (1.9)	46
4. States issues explicitly	75%	84%	-	57%	64%	-
5. Questions relevancy	.1 (.3)	.4 (.7)	31	.3 (.6)	.2 (.3)	23
6. Asks for summary	.9 (.9)	1.4 (1.0)	63	.7 (.9)	1.0 (.7)	62
7. Asks for temporary agreement	.1 (.2)	.2 (.4)	31	.1 (.2)	.2 (.6)	15
8. Asks students to use techniques	.9 (1.1)	1.8 (1.5)	59	.7 (.8)	1.3 (1.0)	46
9. Asks for review	53%	81%	-	35%	29%	-
10. Asks for different positions	6%	28%	-	0%	7%	-
11. Asks for modifications	0%	16%	-	0%	21%	-
12. Asks about next step	6%	22%	-	0%	0%	-

Variable 1 is based on a 5 minute portion of the audiotape; variables 9, 10, 11, and 12 on the last 8 minutes; and variables 2, 3, 5, 6, 7, 8 on a 15 minute portion.

Table 19
Student Behavioral Results - Study 1

VARIABLES	EXPERIMENTAL (N=32)*			CONTROL (N=13)*		
	PRECOURSE MEAN (S.D.)	POSTCOURSE MEAN (S.D.)	% IMPROVING	PRECOURSE MEAN (S.D.)	POSTCOURSE MEAN (S.D.)	% IMPROVING
STUDENT						
1. Student-student interaction	6.8 (6.2)	15.0 (8.6)	81	13.0 (12.1)	11.4 (5.4)	46
2. Student talk	14.5 (7.5)	21.0 (9.1)	75	21.0 (12.5)	18.6 (5.6)	54
3. Personal attack	.1 (.3)	.6 (1.0)	63	.2 (.4)	.5 (1.1)	64
4. Acknowledges previous speaker	5.5 (5.3)	13.0 (8.1)	81	12.2 (12.1)	9.3 (5.1)	38
5. Questions irrelevancy	.0 (.1)	.4 (.7)	34	.0 (.1)	.2 (.3)	31
6. Asks for clarification	.5 (.7)	1.3 (1.5)	50	.8 (.8)	1.0 (1.2)	46
7. Asks for evidence	1.3 (2.0)	3.0 (1.9)	69	1.4 (1.9)	1.7 (2.0)	54
8. Asks about values	.1 (.2)	.5 (.9)	41	.1 (.2)	.5 (.6)	46
9. Gives accurate review	22%	47%	-	14%	7%	-
10. States others' positions	3%	25%	-	0%	7%	-
11. Modifies position	0%	22%	-	0%	29%	-
12. Discusses next step	6%	19%	-	0%	0%	-

Variables 1, 2, and 4 are based on a 5 minute portion of the audiotape; variables 9, 10, 11, and 12 on the last 8 minutes; and variables 3, 5, 6, 7, 8 on a 15 minute portion.

* N = Number of classrooms

Table 20
Moderator Behavioral Results - Study 2

VARIABLES	EXPERIMENTAL (N=11)			CONTROL (N=6)		
	PRECOURSE MEAN (S.D.)	POSTCOURSE MEAN (S.D.)	% IMPROVING	PRECOURSE MEAN (S.D.)	POSTCOURSE MEAN (S.D.)	% IMPROVING
MODERATOR						
1. Percent of teacher talk	36% (8.7)	34% (12.6)	45	33% (15.7)	35% (11.9)	33
2. Non-moderator talk	2.6 (1.9)	5.1 (5.2)	55	5.4 (4.7)	11.3 (5.7)	0
3. Calls on non-talkers	1.3 (1.2)	1.4 (2.0)	45	1.6 (1.4)	1.2 (1.7)	17
4. States issue explicitly	45%	73%	-	67%	50%	-
5. Questions relevancy	.0 (.0)	.1 (.3)	9	.0 (.0)	.2 (.3)	33
6. Summarizes trends	.4 (.5)	.7 (.8)	27	.4 (.5)	1.0 (.9)	50
7. Asks for temporary agreement	.0 (.0)	.4 (1.2)	18	.0 (.0)	.2 (.4)	33
8. Asks students to use techniques	.3 (.4)	1.4 (1.4)	73	.4 (.6)	1.4 (1.5)	50
9. Asks for review	45%	55%	-	33%	50%	-
10. Asks for different positions	0%	9%	-	0%	0%	-
11. Asks for modifications	18%	0%	-	0%	0%	-
12. Asks about next step	9%	45%	-	17%	0%	-

Variable 1 is based on a 5 minute portion of the audiotape; variables 9, 10, 11, and 12 on the last 8 minutes; and variables 2, 3, 5, 6, 7, 8 on a 15 minute portion.

Table 21
Student Behavioral Results - Study 2

VARIABLES	EXPERIMENTAL (N=11) *			CONTROL (N=6) *		
	PRECOURSE MEAN (S.D.)	POSTCOURSE MEAN (S.D.)	% IMPROVING	PRECOURSE MEAN (S.D.)	POSTCOURSE MEAN (S.D.)	% IMPROVING
STUDENT						
1. Student-student interaction	5.5 (3.4)	6.3 (5.9)	45	5.6 (5.7)	8.8 (8.2)	33
2. Student talk	12.7 (3.6)	13.6 (5.7)	55	10.9 (3.8)	16.1 (9.2)	50
3. Personal attack	.0 (.0)	.1 (.2)	81	.3 (.4)	.1 (.2)	100
4. Acknowledges previous speaker	4.7 (2.9)	5.5 (5.3)	45	4.8 (5.6)	7.1 (7.5)	50
5. Questions irrelevancy	.1 (.3)	.1 (.3)	0	.0 (.0)	.0 (.0)	0
6. Asks for clarification	.1 (.2)	.6 (.8)	45	.6 (.9)	.7 (.8)	33
7. Asks for evidence	2.2 (2.5)	1.5 (.9)	45	1.6 (1.2)	1.3 (.8)	33
8. Asks about values	.1 (.0)	.1 (.3)	18	.1 (.2)	.2 (.3)	33
9. Gives accurate review	27%	27%	-	17%	17%	-
10. States others' positions	9%	0%	-	0%	0%	-
11. Modifies position	0%	9%	-	0%	0%	-
12. Discusses next step	9%	18%	-	17%	0%	-

Variables 1, 2, and 4 are based on a 5 minute portion of the audiotape; variables 9, 10, 11, and 12 on the last 8 minutes; and variables 3, 5, 6, 7, 8 on a 15 minute portion.

* N = Number of classrooms

Table 22

Results of Ratings 1, 2, and 3 — Control Group

N_1=12 Students
13 Teachers
10 Critiquers

N_2= 6 Students
6 Teachers
5 Critiquers

Group	Raters	Pre		Post		t	% Improving
		X	S.D.	X	S.D.		
Rating 1		1			4		
		Discussion bogged down ←----→ Moved along smoothly					
C_1	Students	3.0	.5	2.8	.4	-1.3	17%
	Teachers	2.8	.7	2.7	.8	- .6	23%
	Critiquers	3.0	.4	2.8	.7	- .7	20%
C_2	Students	3.4	.4	3.0	.3	-2.4	17%
	Teachers	3.2	.8	2.5	.6	-1.6	17%
	Critiquers	3.6	.4	3.1	.2	-3.2*	0%
Rating 2		1			4		
		Talked to moderator ←----→ Talked to each other					
C_1	Students	3.1	.3	3.1	.4	.4	33%
	Teachers	3.0	1.0	3.0	.9	0	23%
	Critiquers	2.6	.9	2.7	.8	.3	20%
C_2	Students	3.0	.7	2.9	.4	- .6	17%
	Teachers	2.8	1.0	3.0	.6	.3	50%
	Critiquers	2.9	1.0	2.5	1.2	- .8	20%
Rating 3		1			4		
		Students not listening ←----→ Really listening					
C_1	Students	3.3	.3	3.2	.4	- .4	42%
	Teachers	3.5	.7	3.4	.5	- .7	8%
	Critiquers	3.0	.5	2.9	.7	- .2	40%
C_2	Students	3.4	.4	3.3	.3	- .9	33%
	Teachers	3.7	.5	3.5	.6	-1.0	0%
	Critiquers	3.5	.5	3.0	0	-2.2	0%

* $p<.05$ (decrease)

Table 23

Results of Ratings 4, 5, 6 — Control Group

N_1=12 Students, 13 Teachers, 10 Critiquers

N_2= 6 Students, 6 Teachers, 5 Critiquers

Group	Raters	Pre $\bar{X}$	Pre S.D.	Post $\bar{X}$	Post S.D.	t	% Improving
Rating 4	1 Discussion wandered ←----→ 4 Focused on issue						
C_1	Students	2.8	.3	2.8	.5	- .4	42%
	Teachers	2.7	1.0	2.8	.7	.2	31%
	Critiquers	2.8	.6	2.6	.8	- .7	30%
C_2	Students	3.2	.4	2.7	.6	-1.5	33%
	Teachers	2.8	.8	2.3	.5	-2.2	0%
	Critiquers	3.7	.4	2.3	.9	-3.1*	0%
Rating 5	1 No learning ←----→ 4 Students learned						
C_1	Students	3.0	.4	2.9	.5	- .4	33%
	Teachers	2.5	.9	3.1	.9	2.2	54%
	Critiquers	2.4	.7	2.3	.4	- .6	20%
C_2	Students	3.3	.5	3.0	.4	-2.6*	17%
	Teachers	2.8	.4	2.8	.8	0	33%
	Critiquers	2.9	.2	2.3	.3	-3.2*	0%
Rating 6	1 Discussion of no effect ←----→ 4 Resulted in positive action						
C_1	Students	2.9	.5	2.6	.4	-2.0	9%
	Teachers	2.5	1.0	2.6	1.0	.8	46%
	Critiquers	2.0	.7	1.8	.6	- .6	30%
C_2	Students	2.9	.6	2.5	.4	-4.2**	0%
	Teachers	2.2	.4	2.4	.6	1.0	33%
	Critiquers	2.2	.8	1.9	.4	-1.2	20%

* $p<.05$ (decreases)
** $p<.01$ (decrease)

Table 24

Teacher Questionnaire -- Control Group

N_1=13 N_2=6

Group	Pre $\bar{X}$	Pre S.D.	Post $\bar{X}$	Post S.D.	t	% Improving
1. How do you feel about having controversial issues in your class? 1 Uncomfortable 4 Comfortable						
C_1	3.8	.6	3.8	.6	0	0%
C_2	3.7	.5	3.7	.8	0	17%
2. Your skill as a moderator is 1 in need of a lot of improvement 4 satisfactory						
C_1	2.8	.8	2.9	.9	.3	23%
C_2	2.7	1.0	2.8	1.2	1.0	17%
3. Your understanding of how to teach discussion is 1 unsatisfactory 4 satisfactory						
C_1	2.8	.9	2.9	.6	.3	23%
C_2	2.5	.6	2.5	.8	0	17%
4. As a result of the discussion, your understanding of the issue 1 became less clear 4 became clearer						
C_1	3.3	.6	3.4	.5	.4	31%
C_2	3.2	1.0	3.3	.8	.4	17%
5. In a controversial issues discussion, consideration of values is 1 usually inappropriate 4 of prime importance						
C_1	3.8	.4	3.8	.4	0	8%
C_2	3.2	.8	3.2	.8	.6	33%

Table 25

Short Student Questionnaire: Study 1 and Study 2 -- Control Group

	C_1		C_2	
	Pre	Post	Pre	Post
1. The issue was chosen by:				
Teachers and Students	30.2%	35.2%	61.5%	66.0%
Teacher Only	48.3%	45.7%	23.1%	29.8%
Students Only	21.6%	19.0%	15.4%	4.3%
2. As a result of the discussion, your understanding of your own position on the issue				
Became less clear	2.6%	5.7%	2.5%	4.3%
Remained the same	44.8%	39.6%	40.0%	55.3%
Became clearer	52.6%	54.7%	57.5%	40.4%
3. Your understanding of the position of others				
Became less clear	6.1%	2.8%	0.0%	2.1%
Remained the same	27.2%	23.6%	30.0%	33.3%
Became clearer	66.7%	73.6%	70.0%	64.6%
4. As a result of the discussion, your original position was				
Strengthened	40.2%	38.2%	41.0%	44.7%
Modified somewhat	55.4%	58.8%	56.4%	53.2%
Weakened	4.5%	2.9%	2.6%	2.1%
5. During the discussion you spoke				
Several times	42.4%	40.4%	32.5%	35.4%
A few times	50.9%	49.0%	60.0%	54.2%
Not at all	6.9%	10.6%	7.5%	10.4%

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